

USSR/Farm Animals. Cattle

Q-2

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 35648

Author : Domchonko F.V., Kapustina A.V.

Inst : Not Given

Title : Green Corn in the Rations of Calves and Heifers (Zelennyya kukuruza v ratsionakh telyat i tolok)

Orig Pub : Kukuruzn, 1957, No 10, 46-48

Abstract : No abstract

Card : 1/1

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L 4515-56 EWT(1)/EWT(m)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5022842

UR/0000/65/000/000/0283/0285

AUTHOR: Kapustin, I. N. ; Kapustina, A. V.

TITLE: A possible cause of instrumental errors in neutron monitors

SOURCE: Vsesoyuznoye soveshchaniye po kosmofizicheskemu napravleniyu issledovaniy kosmicheskikh luchey. 1st, Yakutsk, 1962. Kosmicheskiye luchy i problemy kosmofiziki (Cosmic rays and problems in cosmophysics); trudy soveshchaniya. Novosibirsk, Redizdat Sib. otd. AN SSSR, 1965, 283-285

TOPIC TAGS: cosmic ray measurement, error, radiation counter, neutron counter

ABSTRACT: The cosmic ray registration variations found in neutron monitors showed the existence of significant deviations from the Poisson curve. The authors assumed that these deviations are caused by the appearance of an oxide film on the central high-voltage contacts of the counter. Due to a low counting rate the film reappears after sporadic breakdowns, and this leads to the appearance of false counts. To check this assumption, the authors soldered all counter contacts capable of producing spurious counts. Curves obtained following this procedure exhibited the correct Poisson distribution. Orig. art. has: 1 formula and 4 figures.

Card 1/2

09010060

L-4515-66

ACCESSION NR: AT5022842

ASSOCIATION: Polyarnyy geofizicheskiy institut Kol'skogo filiala AN SSSR (Polar Geophysical Institute, Kola Branch, AN SSSR)

SUBMITTED: 29Oct64

ENCL: 00

SUB CODE: AA, NP

NO REF SOV: 000

OTHER: 000

  
Card 2/2

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720520007-8

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720520007-8"

KORNIYENKO, T.P.; KAPUSTINA, F.G.; POLYAKOV, M.V.

Method of separate calorimetry for studying the conversion of ethyl alcohol to acetaldehyde. Part 1: Effect of the nature of solid surface. Ukr.khim.zhur. 28 no.2:192-198 '62. (MIRA 15:3)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR.  
(Ethyl alcohol) (Acetaldehyde)

KORNIYENKO, T. P.; KAPUSTINA, F. G.; POLYAKOV, M. V.

Study of the conversion of ethyl alcohol to acetaldehyde by the method of separate calorimetric measurement. Part.2: Role of oxygen in the process of alcohol conversion. Ukr. khim. zhur. 28 no.3:343-346 '62. (MIRA 15:10)

1. Institut fizicheskoy khimii im. L. V. Pisarshevskogo AN UkrSSR.

(Ethyl alcohol) (Acetaldehyde)

KAZ'MIN, A.I., doktor med.nauk; MALOVA, M.N., kand.med.nauk;  
KAPUSTINA, G.M., kand.med.nauk

Hemodynamic changes in kyphoscoliosis. Ortop., travm. i protez.  
26 no.12:64 D '65.

(MIRA 19:1)  
1. Iz TSentral'nogo instituta travmatologii i ortopedii (direktor -  
chlen-korrespondent AMN SSSR, prof.M.V.Volkov). Adres avtorov:  
Moskva, A-299, ul.Priorova, d.10, TSentral'nyy institut travma-  
tologii i ortopedii. Submitted June 16, 1965.

VOLODIN, N.I.; KAPUSTINA, G.M. (Moskva)

Cholesteatomas of the cauda equina region following endolumbal streptomycin injections. Klin. med. 41 no.9:49-53 S\*63  
(MIRA 17:3)

1. Iz gospital'noy terapevticheskoy kliniki ( dir. - chlen korrespondent AMN SSSR prof. P.Ye. Lukomskiy ) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova i patomorgologicheskogo otdeleniya (nauchnyy rukovoditel' - prof. B.P. Ugryumov) Moskovskoy gorodskoy klinicheskoy bol'nitsy No.59.

KAPUSTINA, G. M.; ZAGNITKOVSKAYA, E. M. (Moskva)

Hemochromatosis (pigmentary cirrhosis of the liver, bronze diabetes).  
Klin. med. no.6:39-43 '61. (MIRA 14:12)

1. Iz terapevticheskogo otdeleniya (zav. N. Z. Voloshchenks)  
Gorodskoy bol'nitsy No. 50 (glavnyy vrach N. P. Brusova).

(HEMOCHROMATOSIS)

KAPUSTINA, Irina Andrianovna; KUL'TIN, Boris Ivanovich; MANUSHKO, Fedor Ivanovich; KOLIADA, G.I., redaktor; BOBROVA, Ye.M., tekhnicheskiy redaktor

[Experience in servicing automatic train control equipment] Opyt obsluzhivaniia ustroystv marshrutno-releinoi tsentralizatsii. Moskva, Gos. transp. zhel-dor. izd-vo, 1957. 44 p. (MIRA 10:4)  
(Railroads--Automatic train control)

ZAV'YALOV, B.A., kand, tekhn. nauk; NEUGASOV, N.M., dotsent; KAPUSTINA, I.A.,  
inzh.; KUL'TIN, B.I., inzh.

Automatic dispatcher control system. Sbor. trud. LIIZHT no. 205:3-20 '63.  
(MIRA 18:1)

KAPUSTINA, I.N.; PYLENKOV, B.N.; YUDIN, G.T.

New data on the stratigraphy of Lower and Middle Miocene sediments in Stavropol Territory. Trudy MINKHiGP no.36:92-101 '62.  
(MIRA 15:6)  
(Stavropol Territory--Geology, Stratigraphic)

BORISENKO, Ye.M.; KAPUSTINA, I.N.

Structural-facies conditions governing the distribution of  
oil and gas in the Paleogene sediments of Stavropol Territory.  
Neftegaz. geol. i geofiz. no.7:24-29 '63.

(MIRA 17:10)

1. Stavropol'skiy filial Groznenskogo neftyanogo nauchno-  
issledovatel'skogo instituta.

BELITSIN, M.; KAPUSTINA, L.

Conference of readers. Khim.volok. no.2:79 '62. (MIRA 15:4)  
(Textile fibers, Synthetic--Periodicals)

USENKO, V.A., prof.; SAIDMURATOV, S., aspirant; KAPUSTINA, L.D., inzh.

Manufacturing methods of elastic nylon thread. Tekst.prom.22 no.3:  
42-44 Mr '62. (MIRA 15:3)

1. Zaveduyushchiy kafedroy tekhnologii shelka i krucheniya  
iskusstvennykh volokon Moskovskogo tekstil'nogo instituta (for  
Usenko). 2. Kafedra tekhnologii shelka i krucheniya iskusstvennykh  
volokon Moskovskogo tekstil'nogo instituta (for Saidmuratov).
3. Klinskiy kombinat iskusstvennogo volokna (for Kapustina).  
(Nylon)(Elastic fabrics)

S/081/62/000/021/067/069  
B160/B186

AUTHORS: Usenko, V. A., Saidmuratov, S., Kapustina, L. D.

TITLE: Methods of producing elastic caprone threads

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1962, 496  
abstract 21P410 (Tekstil'n. prom-st', no. 3, 1962, 42-44)

TEXT: The results are given of investigations made by the kafedra tekhnologii tepla i krucheniya iskusstv. volokon Moskovskogo tekstil'nogo in-ta (Department of Artificial Fiber Heat and Twisting Technology of the Moscow Textile Institute) and by the Klinskiy kombinat iskusstvennogo volokna (Klin Artificial Fiber Combine) aimed at finding the optimum technology for the production of elastic from caprone threads.

[Abstracter's note: Complete translation.]

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KAPUSTINA, L.D.; KOLOBOVA, T.I.; TUMANOVA, G.V.

Experience with a continuous single-process twister  
for the manufacture of elastic capron fibers. Khim.volok.  
no.5:57-58 '62. (MIRA 15:11)

1. Klinskiy kombinat iskusstvennogo i sinteticheskogo  
volokna.

(Nylon)  
(Textile machinery)

NEFEDOVA, I.T.; KAPUSTINA, L.D.

Determination of fat content of aqueous lubricants. Khim. volok.  
no.6:65-67 '64. (MIRA 18:1)

1. Daugavpilsskiy zavod sinteticheskogo volokna.

S/054/60/000/02/13/021  
B022/B007

AUTHORS: Goryunov, A. A., Myuller, R. L., Kapustina, L. K.  
TITLE: The Rate of the Removal of Ruthenium Tetraoxide From Aqueous  
Solutions by Means of an Air Current  
PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii,  
1960, No. 2, pp. 104-111

TEXT: In an earlier paper (Ref. 1), which is the first attempt at investigating the kinetics of distilling-off ruthenium in form of ruthenium tetraoxide, the distilling-off of ruthenium was found to consist of two independent processes, viz. the chemical process of the oxidation of ruthenium to  $Ru^{8+}$ , and of the physical process of the removal of the  $RuO_4$  formed, either by direct evaporation or by means of an air flow blown through the solution. In the presence of a reducing agent a reversible reduction process of  $RuO_4$  to lower oxides may occur. In the present case, the reducing agent used was hydrochloric acid. The investigation under review concerns the physical process of removing  $RuO_4$  by means of an air

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The Rate of the Removal of Ruthenium Tetraoxide  
From Aqueous Solutions by Means of an Air  
Current

S/054/60/000/02/13/021  
B022/B007

current from an aqueous solution in the absence of a reducing agent. The kinetics of the process mentioned in the title was investigated in an apparatus consisting entirely of glass (Fig. 1). Among other things, also a Komovskiy pump was used. Five series of measurements were carried out at temperatures of about 20, 40, 60, 80, and 100°C, and a velocity of air flow of about 5, 15, 30, 45 and 60 l/h. Figs. 2 and 3 show the results obtained for the rate of the removal of  $\text{RuO}_4$  from solutions of nitric acid in form of diagrams. A summary of the experimentally determined half-periods and of the rate constants of the removal of  $\text{RuO}_4$  from nitric acid solutions at various velocities of the air flow and temperatures of the reaction mixture is given (Table 1). The temperature dependence of the logarithm of the rate constant of the removal of  $\text{RuO}_4$  from nitric acid solutions with an air current at different velocities of the air flow is given in Fig. 4. Table 2 gives the values of the coefficients A, B, of the activation energy E, and of the pre-exponential factor  $C_0$  for the process mentioned. On the basis of the results obtained it may be concluded that the limitation of the process of removing  $\text{RuO}_4$  by the evaporation rate of water under the non-steady conditions in the quick passage of air through

✓B

Card 2/3

The Rate of the Removal of Ruthenium Tetroxide  
From Aqueous Solutions by Means of an Air  
Current

S/054/60/000/02/13/021  
B022/B007

the solution is absolutely possible. As to the decrease in activation energy with an increase in the quantity of air blown through, the latter may be explained by the use of non pre-heated air, contrary to the conditions used by M. V. Tobvin and Ye. V. Savinova (Ref. 7). There are 4 figures, 2 tables, and 7 references, 4 of which are Soviet. ✓ B

Card 3/3

0000072052000

BORODINA, M.L.; SHAYKEVICH, S.B.; KAPUSTINA, M.D.; VASIL'YEVA, N.L.

Ilmenite concentrates for the production of titanium dioxide by the  
sulfuric acid method. Lakokras.mat. i ikh prim. no.2:22-25 '63.  
(MIRA 16:4)

(Ilmenite)

(Titanium oxides)

KAPUSTINA, M. I.

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720520007-8"

USSR/Metals - Rolling

Spe 50

"Electric Contact Method for Determination of the Speed of Rolled Metal,"  
I. M. Pavlov, N. P. Ganin, I. V. Rudbakh, M. I. Kapustina, Moscow Inst of  
Steel ineni I. V. Stalin

"Zavod Lab" Vol XVI, No 9, pp 1074-1075.

Describes equipment used for determining speeds of metal in rolling process  
by method of electric contacts. Speeds of front and rear ends of billet and  
circumferential speed of rollers are determined directly. Therefore, not only  
a lead, but also a lag may be determined experimentally. One of essential  
advantages of method is independence of measuring accuracy from variations in  
temperature of metal and rollers.

FA 169751.

KAPUSTINA, M.I.

SOV/137-58-8-16826

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 85 (USSR)

AUTHORS: Starchenko, D.I., Kapustina, M.I., Gorenshteyn, M.M.,  
Danilov, V.D., Savchenko, A.M., Yefimenko, S.P.

TITLE: Intensifying Breakdown Operations in Rolling Heavy Sheet (Intensifikatsiya rezhimov obzhatiya pri prokatke tolstykh listov)

PERIODICAL: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, 1957, Nr 4,  
pp 126-142

ABSTRACT: Experimental rolling (R) and study of existing breakdown schedules (B) for thick sheets of the major sizes, types, and grades of steel on the Nr-1 mill of the im. Il'ich plant make it possible to define the unused power and available energy of the mill during the initial period of R of 8.8x2095 mm and 10.8x2085 mm Nr-3 steel sheets, and also to determine unused biting capacity of the rolls. These factors are used to develop and recommend new, more intensive B schedules, envisaging a considerable increase in B during the first passes, with the present deformation ratios being retained essentially at the end of B. The B of sheets of different types and dimensions was performed in 21-23 passes as against 27-31 passes under the

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SOV/137-58-8-16826

Intensifying Breakdown Operations in Rolling Heavy Sheet

old B schedules, making it possible to reduce the R time for a single ingot and thus to raise the productivity of a three-high Lauth mill by 5-6% on the average.

A.N.

1. Steel--Processing
2. Sheets
3. Rolling mills--Performance

Card 2/2

SOV/137-58-9-18985

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 119 (USSR)

AUTHORS: Kapustina, M.I., Danilov, V.D., Savchenko, A.M.

TITLE: ~~A Contribution to the Problem of Determination of Pressures and Torque Moments in Rolling Mills~~ (K voprosu ob opredelenii davleniy i krutyashchikh momentov na prokatnykh stanakh)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya, 1958, Nr 1, pp 138-143

ABSTRACT: An examination is made of the operating conditions of resistance strain gages (SG) pasted onto rolling-mill spindles. These are compared to the operating conditions for similar SG pasted onto a calibration beam. It is shown that a wire SG attached to the surface of a spindle at  $45^{\circ}$  to its axis is subjected to a state of plane stress (PS) when the spindle is subjected to torque. The constantan SG usually employed have a tensile sensitivity range of 2.1-2.3 and function differently under conditions of linear and plane S. Therefore, given identical degrees of SG strain on the beam and the spindle, the strains causing them prove to be different. It is determined by experiment that the stress on the spindle is 75% of that on the beam. It is

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SOV/137-58-9-18985

A Contribution to the Problem of Determination of Pressures (cont.)

shown that the correction factors of 0.9 to 1 recommended in the literature are erroneous. Therefore, it is shown that in order to determine torque moments under conditions of industrial operation, the calibration of wire SG must be done on special models, the nature of the S on the surface of which corresponds to the nature of the S on the surface of the shaft being subjected to torque. It is observed that the accuracy of measurement of the roll-separating pressure by attaching a pick-up to the housing depends upon the point at which the pick-up is bonded.

M.Z.

1. Rolling mills--Operation
2. Rolling mills--Torque
3. Strain gages--Applications
4. Rolling mills--Pressure

Card 2/2

STARCHENKO, D.I., doktor tekhn.nauk, prof.; KAPUSTINA, M.I., kand.tekhn.nauk, dotsent; GORENSHTEYN, M.M., kand.tekhn.nauk, dotsent; DANILOV, V.D., inzh.; SAVCHENKO, A.M., inzh.; YEFIMENKO, S.P., inzh.

Investigating deformation conditions in plate rolling. Izv. vys. ucheb. zav.; chern.met. no.5:121-129 My '58. (MIRA 11:7)

1. Zhdanovskiy metallurgicheskiy institut.  
(Deformations (Mechanics)) (Rolling (Metalwork))

KIRILLOV, B.S. , kand.tekhn.nauk. KAPUSTINA, M.I.; KUZEMA, I.D.;  
DANILOV, V.D., inzh.; SAVCHENKO, A.M.

Investigating the crankshaft of a rolling mill steam driving  
system. Izv.vys.ucheb.zav.; chern.met. 2 no.2:143-151 F '59.  
(MIRA 12:6)

1. Zhdanovskiy metallurgicheskiy institut. Rekomendovano kafedroy  
mekhanicheskogo oborudovaniya metallurgicheskikh zavodov Zhdanovskogo metallurgicheskogo instituta.  
(Crank and crankshafts--Testing)  
(Rolling mills)

18.5100,25.2000

77139  
SOV/148-59-9-9/22

AUTHORS: Kapustina, M. I., Kuzema, I. D., Kirillov, B. S.  
(Candidates of Technical Sciences), Danilov, V. D.,  
Savchenko, A. M. (Engineers)

TITLE: Development of Rational Rates of Rolling Ingots on a  
Roughing Mill

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya  
metallurgiya, 1959, Nr 9, pp 95-100 (USSR)

ABSTRACT: A study of the work of the roughing mill at the shape  
rolling shops of the Plant imeni Il'yicha (Sortoprokatnyy  
tsekh zavoda imeni Il'yicha) for the purpose of elimi-  
nating the breakdowns of the main steam engine crank-  
shaft and for establishing the optimum method of rolling  
the ingots on the existing roughing mill. B. N.  
Poydyshev, V. N. Demochko, L. N. Kurkin, Ye. N. Grishina,  
V. T. Demchenko, Ts. M. Rakhlin, A. V. Chechnev, P. P.  
Tokarev, N. M. Simonov, and V. M. Buynevich participated  
in the work. The investigated roughing mill consists  
of one two-high reversing 830-stand designated for

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Development of Rational Rates of Rolling  
Ingots on a Roughing Mill

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rolling slabs. The rolls are made from 50KhN steel (chromium-nickel steel: 0.45% C; 0.50% Mn; 0.17% Si; 0.040% P; 0.040% S; 0.45% Cr; 2.50% Ni). The power plant consists of one simple, single expansion, 4,500 HP, 3 cylinder, compound, horizontal, reversing steam engine, working at 6 to 8 atmospheres pressure and a gear transmission. During 1953-1957 there were six crankshaft breakdowns. The intervals between the breakdowns were from 2 to 18 months. The authors describe the methods of investigation and the results of same, with reference to the previous work of T. M. Golubev, L. N. Soroko, and others, who investigated the power characteristics of the blooming mill at the Kuznetsk Metallurgical Combine (Kuznetskiy matallurgicheskiy kombinat) (Golubev, T. M., Soroko, L. N., Zaykov, M. A., Kaftanov, M. P., et al., Stal', Nr 2, 1957). In the present work the strength calculations of the rolls and the crankshaft of the steam engine showed the reasons for their breakdowns. The calculation of the roll showed (see Fig. 4) that the weakest place of the rolls is in the second roll pass,

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Development of Rational Rates of Rolling  
Ingots on a Roughing Mill

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where the highest stresses during rolling of metal in the first and the second roll passes take place (up to  $\sigma = 1,480 \text{ kg/cm}^2$ ). The breakdowns of the lower roll are explained by the fatigue rupture of the lower roll which transmits the whole torsion moment of the second roll pass. The ragging of the second roll pass surface and the swapping of the rolls position (after the second remachining) proved to be the effective means of preventing the breakdowns of the lower roll by the second roll pass. The crank-shaft calculations and the metallographic investigation showed that the cause of its breakdowns is the insufficient fatigue strength of the metal of the first crank arm. It is recommended that the first crank arm be manufactured from the alloy steel with tensile strength of about  $90 \text{ kg/mm}^2$ , which suggests the use of chromium-nickel-molybdenum steel 33KhN3MA (0.29% C; 0.50% Mn; 0.17% Si; 0.035% P; 0.030% S; 0.80% Cr; 2.5% Ni; and 0.20 to 0.30% Mo. There are 4 figures; 2 tables; and 5 Soviet references.

Card 4/5

Development of Rational Rates of Rolling  
Ingots on a Roughing Mill

77139  
SOV/148-59-9-9/22

ASSOCIATION: Zhdanov Metallurgical Institute (Zhdanovskiy matallurgicheskiy institut)

SUBMITTED: June 11, 1959

Card 5/5

KAPUSTINA, M.I., kand.tekhn.nauk; KUZEMA, I.D., kand.tekhn.nauk,  
KIRILLOV, B.S., kand.tekhn.nauk; DANILOV, V.D., inzh., SAVCHENKO,  
A.M., inzh.

Developing efficient conditions of ingot rolling on cogging mills.  
Zool.shur. 38 no.1:95-100 Ja '59. (MIRA 13:4)

1. Zhdanovskiy metallurgicheskiy institut.  
(Rolling (Metalwork))

S/137/61/000/002/008/046  
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No. 2, p. 4, # 2D31

AUTHORS: Kapustina, M.I., Danilov, V.D., Yefimenko, S.P., Savchenko, A.M.  
and Mezhaurov, M.M.

TITLE: Improved Reduction Conditions on a Reversing Thick-Sheet Mill at  
Insufficient Power of the Main Motor

PERIODICAL: "Sb.nauchn.tr.Zhdanovsk. metallurg. in-t", 1960, No.5, pp.257-263

TEXT: The authors analyze factors determining the permissible reduction  
in the rolling of sheets and plates on a reversing 1,200x4,450 mill. It is estab-  
lished that the factor, limiting the reduction, is insufficient power of the drive V  
motor. Under these conditions it is recommended to perform the metal grip by the  
rolls not at the time of speeding-up the motor, which requires the expenditure of  
the dynamical torque component, but after the rolls have attained the rated rota-  
tion speed; to accelerate the speed of rolls the time of pauses should be used..

Ya. Sh.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

S/137/62/000/002/060/144  
A006/A101

AUTHORS: Kapustina, M. I., Kuzema, I. D., Savchenko, A. M., Shiryayev, V. I.,  
Goltvenko, A. I., Grishina, Ye. N.

TITLE: A rapid method of calculating the efficiency of three-high sheet  
rolling mills

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 18, abstract 2D86  
("Sb.nauchn. tr. Zhdanovsk. metallurg. in-t", 1960, no. 6, 186 - 198)

TEXT: Calculation data were checked by the oscillographic timing of a mill  
operation for all the brigades when rolling the main conventional sheet types of  
the mill assortments. A method was developed for calculating the efficiency of  
three-high mills on the basis of an analysis of reduction conditions, and force  
and power indices of rolling. The theoretical calculation of the efficiency of  
sheet rolling mills is given. The problem is discussed how to check the mill  
amount of work. ✓

N. Yudina

[Abstracter's note: Complete translation]

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18.8100

25937  
S/136/61/000/008/005/005  
E193/E135

AUTHORS: Kapustina, M.I., Candidate of Technical Sciences;  
Karnaushenko, N.A., Engineer; Savchenko, A.M.,  
Engineer; and Kuz'min, V.I., Engineer.

TITLE: Determination of thermo-physical properties of a  
titanium alloy 48-OT-3 (48-OT-3)

PERIODICAL: Tsvetnyye metally, 1961, No.8, pp. 73-79

TEXT: Knowledge of the thermo-physical properties of metals  
and alloys is necessary in selecting both the rational heating  
schedules during various fabrication processes and the optimum  
operating conditions for components subjected to variations in the  
ambient temperature. The object of the present investigation was  
to determine the thermal conductivity ( $\lambda$ , kcal/m h °C), specific  
heat ( $C$ , kcal/kg °C), and the thermal diffusivity ( $a$ , mm<sup>2</sup>/h)  
( $a = \lambda/C\gamma$ , where  $\gamma$  is the density of the material) of the  
48-OT-3 Ti-base alloy. This alloy contained 3.5-4.0% Al, not more  
than 0.1% nitrogen, 0.1% oxygen and traces of hydrogen. The  
measurements were carried out at temperatures ranging from 100 to  
1025 °C. The magnitude of  $a$  and  $C$  only was determined;  
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Determination of thermo-physical ...

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S/136/61/000/008/005/005  
E193/E135

$\lambda$  was calculated from these data ( $\lambda = aC\gamma$ ), the appropriate correction being applied for the thermal expansion of the alloy. The bulk of the paper is devoted to a detailed description of the experimental technique and equipment used. A technique developed by N.Yu. Tayts and E.M. Gol'dfarb (Ref.2: Zavodskaya laboratoriya, 1950, No.3) and based on a method proposed by G.M. Kondrat'yev (Ref.1: Teplovyye izmeneniya (book "Thermal Changes"), Mashgiz, 1957) was used by the present authors for the determination of  $a$ . The method consists in solving the differential equation of the thermal diffusivity for a slab heated at a constant rate. If the temperature gradient between the surface and the axis of a cylindrical slab at the initial moment is  $\Delta t_0$ , then

$$\frac{\Delta t}{v \tau} = \frac{R^2}{4a \tau} - \left( \frac{R^2}{a \tau} - \frac{4 \Delta t_0}{v \tau} \right) \Phi \left( \frac{a \tau}{R^2} \right) \quad (1)$$

where:  $v$  is the constant heating rate ( $^{\circ}\text{C/h}$ );  $\tau$  is the time (h);  $a$  is the thermal diffusivity ( $\text{mm}^2/\text{h}$ ); and  $\Phi(a\tau/R^2)$  is the function of the Fourier criterion. In practice, this method consists in measuring the temperature on the surface and in the

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Determination of thermo-physical ....

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S/136/61/000/008/005/005

E193/E135

interior of a specimen (cylindrical in the present case), heated at a constant rate in a specially designed furnace with low thermal inertia. From the measured temperature gradient at the beginning and end of each heating interval, and from the known heating rate,  $\Delta t_0/vt$  and  $\Delta t/vt$  are calculated, after which the average value of  $a$  is determined. The advantage of this method consists in that the formulae employed do not depend on the external heat transfer conditions. The method used in the present investigation for determining  $C$  is based on the principle of heat balance and has been developed by "Gintsvetmet". It is best described with reference to Fig.4, which shows the experimental assembly comprising the following items: 1, the material tested; 2 and 3, screening vessel and its lid; 4, electric furnace; 5, furnace cover; 6, portable potentiometer; 7, resistance box; 8, step-down transformer; 9, mirror galvanometer;  $T_0$ , thermocouple measuring the temperature at the specimen axis;  $T_c$  and  $T_n$ , differential thermocouple housed in the screening vessel wall. A constant quantity of heat per unit time is supplied to the specimen, and the temperature  $t_0$  at the specimen axis is measured as well as the temperature gradient,  $\Delta t$ , across the screening vessel wall.

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Determination of thermo-physical ....

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When the temperature at the specimen axis is raised from zero to  $t$  °C, the heat balance is described by:

$$\left( F \frac{\lambda}{s} \rho \right) \Delta t_1 z_1 = q_{ak} + i_1 w_1$$

(3) ✓

where:  $F$  is the surface area ( $m^2$ ) of the screening vessel through which heat is conducted;  $\lambda$  is the thermal conductivity coefficient of the screening vessel material ( $cal/m^2 h$  °C);  $s$  is the screening vessel wall thickness ( $m$ );  $\rho$  is a correction factor taking into account the fact that heat flows not through a flat surface but through a cylindrical wall and a lid;  $\Delta t_1$  is the average temperature gradient across the screening vessel wall (°C);  $z_1$  is the time ( $h$ ) required to raise the temperature in the centre of the crucible from zero to  $t$  °C;  $q_{ak}$  is the heat ( $kcal$ ) accumulated in the screening vessel in the time  $z_1$ ;  $i_1$  is the heat content ( $kcal/kg$ ) of the specimen at  $t$  °C; and  $w_1$  is the weight of the specimen ( $kg$ ). The experiment is repeated three times: twice on a standard material with a known heat content, specimens of different weight ( $w_1$  and  $w_2$ ) being used each time, and

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Determination of thermo-physical ...

once on the material studied, the weight of the test piece in this case being  $w_3$ . Three heat balance equations are obtained in this manner for each of the temperature intervals selected, and from these the formula for the heat content of the material studied is derived in the form of:

$$i_3 = \frac{i_2 w_2 - i_1 w_1}{w_3} \left( \frac{\Delta t_3 z_3 - \Delta t_1 z_1}{t_2 z_2 - t_1 z_1} \right) + \frac{i_1 w_1}{w_3} \quad (4)$$

Since it was found that the temperature-dependence of heat content of copper was not linear, nickel was used as the standard material in the present investigation. The results of the measurements of thermal diffusivity of the 48-OT-3 alloy are given in Table 1, under the following headings: 1) alloy temperature, °C; 2)  $a$ ,  $m^2/h$ . The results of the specific heat measurements are tabulated and also reproduced graphically in Fig.6, where the specific heat  $C$  (kcal/kg °C) is plotted against the temperature (°C), curve 1 showing the actual  $C$  at a given temperature, and curve 2 showing the average  $C$  for any 20 °C to  $t_0$  temperature interval. Finally,

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Determination of thermo-physical ....

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the data on thermal conductivity, calculated from  $\lambda = \alpha \gamma$ , are given in Table 2 under the following headings: 1) temperature, °C; 2)  $\lambda$ , kcal/m h °C. The investigation was directed by Doctor of Technical Sciences D.I. Starchenko. There are 6 figures, 3 tables and 3 Soviet references.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut  
(Zhdanov Metallurgical Institute)

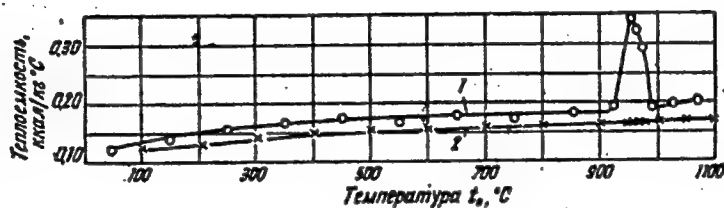


Fig.6

Card 6/ 9

SAMSONOVA, A.N.; KAPUSTINA, M.M.; GOGOLEVA, M.Ye.; APANAS'YEVA, V.

Development of the technology for the processing of large-fruit  
wild roses. Trudy VNIKOP no.11:21-26 '62. (MIRA 17:9)

*KAPUSTINA, N.K.*  
USSR/Human and Animal Physiology - The Nervous System.

7-8

Abs Jour : Ref Zhur - Biol., No 4, 1958, 13519

Author : S.I. Frankshteyn, V.A. Antonyuzhenko, V.Yu. Girshevich  
and N.K. Kapustina

Inst :  
Title :

The Significance of Pathological Dominance in a Clinic of  
Central Paralysis (The Mechanisms of Increase in Muscle  
Tonus, Pathological Reflexes, Synkinesis and the Restora-  
tion of Motor Function).

Orig Pub : Vestn. Akad. med. nauk SSSR, 1957, No 3, 17-29

Abstract : On the basis of experimental data and clinical observa-  
tions the authors arrive at the conclusion that at the  
root of the increase in muscle tonus in decerebrate ri-  
gidity and hemiplegia lies the emergence of dominant ex-  
citation foci in the central nervous system--in the first  
case as a result of disinhibition of the centers of anti-  
gravitational muscles, which are even normally in a state

Card 1/2

*Clinic of Nervous Diseases -  
Cent Inst Advan. Ing Physics*

KAPUSTINA, O.A.

Absorption of ultrasound in a three-component system. Akust.zhur.  
8 no.3:314-319 '62. (MIRA 15:11)

1. Akusticheskiy institut AN SSSR, Moskva.  
(Absorption of sound) (Suspensions (Chemistry))

KAPUSTINA, O.A.

Dependence of the degree and efficiency of ultrasonic degassing  
of a liquid on the power radiated. Akust. zhur. 9 no.4:424-426  
'63. (MIRA 17:3)

1. Akusticheskiy institut AN SSSR, Moskva.

KAPUSTINA, O.A.

Kinetics of the process of ultrasonic degassing of a liquid in  
the precavitation mode. Akust.zhur. 10 no.4:440-443 '64. (MIRA 18:2)

1. Akusticheskiy Institut AN SSSR, Moskva.

KAPUSTINA, O.A.

Effect of ultrasound on the growth of an air bubble in water.  
Akust. zhur. 11 no.1:116-119 '65.

(MIRA 18:4)

1. Akusticheskiy institut AN SSSR, Moskva.

L 34470-02

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I 34476-65

ATTENTION: [illegible]

Date is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]  
of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]  
A source [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]  
and [illegible]

ASSOCIATION [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

REACTOR [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

NO PER SOV [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Card

USPENSKIY, F.M., kand. biol. nauk; SOMOV, I.A.; MUMINOV, A.M.,  
kand. sel'khoz. nauk; IVANOV, Ye.N., kand. biol. nauk;  
VASIL'YEV, A.A., kand. sel'khoz. nauk; SOLOV'YEVA, A.I.,  
kand. sel'khoz. nauk; ZAPROMETOV, N.G., doktor sel'khoz.  
nauk; YAKHONTOV, V.V., doktor biol. nauk; KAPUSTINA, R.I.;  
STROMM, N.G.; POLEVSHCHIKOVA, V.N., kand. sel'khoz. nauk;  
KARIMOV, M.A., doktor biol. nauk; NOSKOV, I.G., kand. sel'-  
khoz. nauk; KHODZHAYEV, A.Kh.; ALEYEV, B.G., kand. sel'khoz.  
nauk; YAKHONTOV, V.V., doktor biol. nauk; STEPANOV, F.A.;  
LYUBETSKIY, Kh.Z., kand. med. nauk; GUREVICH, B.E.;  
KONDRAT'YEV, V.I.; SUDARS, L.P.; KOSTENKO, I.R., zasl. agr.  
Uzbekskoy SSR; GORELIK, I.M., red.; BAKHTIYAROV, A., tekhn.  
red.

[Manual on controlling the pests, diseases and weeds of cot-  
ton, corn, and legumes] Spravochnik po bor'be s vreditel'ny  
i boleznyami khlopchatnika, kukuruzy i bobovykh kul'tur. Izd.2.,  
perer. i dop. Tashkent, Gos.izd-vo UzSSR, 1963. 325 p.

(MIRA 16:5)

(Field crops—Diseases and pests)  
(Weed control)

<p><b>KAPUSTINA, I. I.</b></p> <p><b>Electrolytic production of mercuric oxide. I. I. Kurmin and T. F. Kapustina (Ivanov Chem.-Technol. Inst.). J. Applied Chem. (U.S.S.R.) 19, 900-8(1946) No. 9,</b></p>		<p>4</p>
<p>Electrolytic oxidation of Hg anodes to HgO in aq. NaOH + Na<sub>2</sub>CO<sub>3</sub> solns. of various compns., at 25°, 50°, and 80°, with e.d. 0.6 amp./sq. dm., for 1 hr., gave only poor yields of 30-40% HgO in the product, and low current efficiencies. A rich product with 94% HgO, 80.8%, was obtained in NaOH 31.6 g./l., Na<sub>2</sub>CO<sub>3</sub> 2.00, at 25° and 50°, and in NaOH 112.0, Na<sub>2</sub>CO<sub>3</sub> 4.24 at 80°, at low e.d., 0.6 amp./sq. dm. Attempts to raise the permissible e.d. without loss of HgO content and through addn. of starch, gelatin, and glue, were unsuccessful: 1-2 g./l. of the latter two suppressed the formation of HgO altogether. Addn. of 1 g./l. sugar resulted in 92.7% HgO, with 89%, at e.d. 1 amp./sq. dm. Variation of the electrode spacing from 2 to 10 cm. had no effect. Removal of the percale diaphragms around the cathode lowered the HgO content from 94 to 87.6%, owing to increased cathodic reduction of the HgO formed at the anode; from this point of view, the ratio of the surface areas of cathode and anode should be not less than 0.6. Stirring of the Hg favors removal of the</p>		<p>passivating film on the anode but also promotes contamination of the product with finely divided metallic Hg; optimum compromise rates are 85, 150, and 180 r.p.m. at e.d. 0.5, 1.25, and 2.0 amp./sq. dm., resp.; with addn. of sugar, and a suitable rate of stirring, the e.d. can be raised to 2.3 amp./sq. dm. In continuous operation, the upper layer of the electrolyte (1-4 cm. deep) is siphoned off, and replaced continually with fresh soln.; the upper part of the cathode should be insulated with resin; at room temp., NaOH 39, Na<sub>2</sub>CO<sub>3</sub> 0.4 g./l., e.d. 0.5 amp./sq. dm., <math>\eta</math> is 94%, HgO 98.1%; at e.d. 1.0, HgO 94.2%; with 1 g./l. of sugar, e.d. 1.2, 3 amp./sq. dm., <math>\eta</math> = 92.0, 82.3, 87.6%, HgO 90.7, 94.0, 85.0%, resp., in runs of 12 hrs. Higher concn. in NaOH (up to 10%) has practically no effect. First portions of the product in the beginning of the electrolysis are, as a rule, poor, owing to the higher initial effective e.d. which drops to a steady lower value as a result of an increase in the effective surface area of the anode.</p> <p>N. Thon</p>
<p>DETAILS: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.</p>		

KAPUSTINA T. F.		PROCESS AND PROPERTIES INDEX	
<p>Mercury oxide. L. L. Kur'min and T. F. Kapustina. U.S.S.R. 66,029, March 31, 1940. Mercury oxide is obtained by electrolyzing solns. of alkalis or alk. solns. of salts with a Hg electrode. To accelerate the process and to obtain a pure product, the electrolyte is circulated and the oxide is settled out outside the electrolyzer. If sugar is added to the electrolyte, the c. d. can be approx. doubled. M. Hosh</p>			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>GROUPS</p>		<p>STATION</p>	
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	

KAPUSTINA, T.M., dotsent

Some factors of topographical anatomy in the etiology and treatment of pseudarthrosis of the shoulder. Ortop.travm. i protez. 17 no.6: 88-89 N-D '56. (MLRA 10:2)

1. Iz kafedry patologicheskoy i topograficheskoy anatomii (zaveduyushchiy - dotsent M.A.Tishchenko), kafedry ortopedii i travmatologii (zaveduyushchiy - zasluzhennyy deyatel' nauki professor N.P.Novachenko) Ukrainskogo instituta usovershenstvovaniya vrachey i kafedry topograficheskoy anatomii (zaveduyushchiy professor I.M.Fayerman) Khar'kovskogo meditsinskogo instituta.  
(SHOULDER--SURGERY)

KAPUSTINA, T.M., dotsent

Some trophic disturbances in the lower extremities in injury of the femoral nerve; an anatomical experimental study (a preliminary report). Trudy Ukr. nauch.-issl. inst. ortop. i travm. no.15:337-342 '59 (MIRA 16:12)

1. Iz Ukrainського nauchno-issledovatel'skogo instituta ortopedii i travmatologii imeni prof. N.I.Sitenko (dir.-chlen korrespondent AMN SSSR prof. N.P.Novachenko) i kafedry operativnoy khirurgii s topograficheskoy anatomiyei (zav. kafedroy prof. I.F.Krupachev) Ukrainського instituta usovershenstvovaniya vrachei (dir. - dotsent I.I.Ovsiyenko).

KAPUSTINA, T.M., dotsent (Khar'kov 68, ul. Akademika Pavlova, d.44, kv.26)

Bone dystrophy in the extremities of rabbits induced by partial resection of the femoral or sciatic nerve. Ortop. travm. i protez. 24 no.2:14-18 F'63. (MIRA 16:10)

1. Iz kafedry operativnoy khirurgii (zav. - dotsent G.N.Toporov), kafedry patologicheskoy anatomii (zav. - prof. M.A.Tishchenko) Ukrainskogo instituta usovershenstvovaniya vrachey i Ukrainskogo instituta ortopedii i travmatologii imeni M.I.Sitenko (dir. chlen-korrespondent AMN SSSR prof. N.P.Novachenko).

\*

KAPUSTINA, T.M.

Topography of bone nerves. Dop. AN URSR no.11:1530-1535 '64.  
(MIRA 18:1)

1. Ukrainskiy institut ortopedii i travmatologii.  
Predstavleno akademikom AN UkrSSR A.F. Makarchenko [Makarchenko,  
O.F.].

KAPUSTINA, T. P.

USSR/ Miscellaneous      Industrial processes

Card           : 1/1      Pub. 104 - 5/12

Authors       : Kapustina, T. P., and Kryzhanovskiy, I. I.

Title          : Automatic feeder for glass-grinding machines

Periodical     : Stelc. 1 ker. 9, 13 - 15, September 1954

Abstract       : An automatic feeder, for the feeding of crocus and abrasive suspension to the glass-grinding machine, is described. Graphs; drawings.

Institution    : ....

Submitted      : ....

KAPUSTINA, T.P.

Category : USSR/Optics - Optical technique

K-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2229

Author : Kumanin, K.G., Kapustina, T.P.

Title : Determination of the Depth of the Matte Layer of Ground Glass by Polishing to a Wedge.

Orig Pub : Sb. statey Leningr. in-ta tekhn. i optiki, 1954, No 11, 42-51

Abstract : No abstract

Card : 1/1

*Kapustina, T.P.*

BARDIN, Anatoliy Nikolayevich; GLEZAROVA, I.L., redaktor; SARKIN, I.G.,  
zasluzhennyy deyatel' nauki, professor, redaktor; MEDVEDEV, N.M.,  
kandidat khimicheskikh nauk, redaktor; IVANOV, L.V., inzhener,  
redaktor; CHURILOVSKIY, V.N., doktor tekhnicheskikh nauk, pro-  
fessor; KAPUSTINA, T.P., kandidat tekhnicheskikh nauk, dotsent;  
ROMANOVA, L.V., Kandidat tekhnicheskikh nauk, dotsent; BOKIN, P.Ya.,  
inzhener; POLLYAK, V.V., kandidat tekhnicheskikh nauk, redaktor;  
PANOVA, L.Ya., tekhnicheskij redaktor.

[Technology of optical glass] Tekhnologiya opticheskogo stekla.  
Moskva, Gos. izd-vo lit-ry po stroitel'nym materialam, 1955. 494 p.  
(Glass, Optical) (MLRA 9:1)

25(1)

SOV/146-58-4-21/22

AUTHORS:

Kapustina, T.P., Candidate of Technical Sciences, Docent, and Kalinina, A.A., Candidate of Technical Sciences

TITLE:

The Problem of the Polishing Process Mechanism

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Priborostroyeniye, 1958, Nr 4, pp 144-150 (USSR)

ABSTRACT:

According to existing opinions, polishing of glass is connected with mechanical surface dispersion processes, chemical and physical-chemical phenomena and also plastic deformations of the glass layers. Presently, it is difficult to decide which one of the aforementioned processes determines the productivity of the polishing process and provides the required surface properties. During the past years studies of the mechanism of the polishing processes of glass and crystals were conducted in the laboratory of glass technology of the Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics) in cooperation with VNIISH. The

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investigations dealt with the problems of proving the possibility of the gradual transition from a ground surface to a polished one by means of subsequent processing the glass with powders of decreasing grain size; the connection between the nature of processing powders and the structure of the polished surface; and the presence of particles of the polished material in the wear products of the polishing process. The development of a method and a partial solution for the first problem was published in the paper by the aforementioned authors (Ref 1). In the present paper, the authors consider above all the second and the third problem. The influence of the nature and the grain size of the surfacing powder on the surface structure was conducted by means of an ultramicroscope. The investigation of abrasive wear products of the polishing process was performed for the first time by X-ray structural analysis. Since the X-ray structural analysis of glass is too difficult, fluorite and Icelandic spar were used. The authors refer to their pre-

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a polished surface, [Ref 2]. The light source in the aforementioned ultramicroscope was a motion picture projector lamp of 300 w. This lamp was later on replaced by a high-pressure lamp of greater brightness. The observation and the photography were conducted with magnifications of  $v_{ob}=6$ ,  $G_{ok}=15$ . The authors describe the photography system used for recording the pictures from the ultramicroscope. An isopan-chromatic film with a sensitivity of 130 degrees according to GOST was used. The film was processed in the photometric device as described in Figure 2. The photometric device was composed of a light source OI-7 and the receiver device from the reflexometer NRG-1 [Ref 3]. The measurements were conducted in 3 zones of the frame. The measuring error had a magnitude of 10%. In Table 1, the magnitudes of K (the quantity of passing light) for surfaces treated with different powders are shown. Figure 3 shows micro-photographs performed by the ultramicroscope with a photohead of a number of surfaces after treating them with mono-

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The Problem of the Polishing Process Mechanism

corundum powders of different grain size. For determining the influence of the powders used for treating the surfaces on the structure of the polished surfaces, samples were compared which were polished with powders of monocorundum, hematite, thorium oxide, and a number of other materials of identical grain size. Table 2 contains a list of magnitudes of K for surfaces treated with the aforementioned powders. Table 2 shows that the magnitude of K for monocorundum and hematite is close, 8.5 and 11.0. Better results were obtained using crocus (60.5). More perfect surface structures were obtained when using rare earth oxides with laminar-shaped grains. The magnitude of K was highest for "polirit" (82.5). In this way, besides by the grain size, the surface structure is influenced by the type of the powder, characterized by its hardness and grain shape. This shows the great importance of mechanical phenomena during the polishing process. Figures 4A and 4B show micro-photographs of some surfaces taken with the ultramicroscope. The authors then explain

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the investigation of abrasive wear products obtained during the polishing process. The collected samples were subjected to an X-ray analysis by Engineer V.I. Kudryavtsev (VNIIASh). The investigation was conducted with copper and cobalt radiation. Figure 5A shows a skiagram of pure fluorite, wear products of fluorite with chromium oxide, and pure chromium oxide. In the skiagram of fluorite wear products, obtained by chromium oxide processing, some intensive lines are visible which belong to fluorite. The same analysis was conducted with icelandic spar crystals as shown in Figure 6. The authors arrive at the following conclusions: It has been established that it is possible to change continuously from a ground surface to a polished one, whereby the influence of the grain size and the nature of processing powders on the structure of the polished surface has been determined. An attempt was made for determining quantitatively the unevennesses of a polished surface. In the abrasive wear products of some crystals the traces of the materials to be polish-

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The Problem of the Polishing Process Mechanism

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ed were found. Further, the conclusion may be made that the conception "polished surface" is not synonymous and requires a more precise definition. As it was shown in this paper, glass polished with powders different according to nature and grain size, produce considerable different light scattering effects. Therefore, it is necessary to consider this in optical-mechanical devices with a great light absorption. There are 2 diagrams, 5 microphotographs and 3 Soviet references.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki  
(Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: July 1, 1958

Card 7/7

15 (2)

307/72-59-6-4/18

AUTHOR:

Kapustina, T. P.

TITLE:

Grinding of Ceramic Material With Free Grinding Means  
(Shlifovka keramicheskikh materialov svobodnym abrazivom)

PERIODICAL:

Steklo i keramika, 1959, Nr 6, pp 18-21 (USSR)

ABSTRACT:

The laboratories for glass technology of the Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute for Precision Mechanics and Optics) carried out tests concerning the choice of tools and equipment as well as regarding optimum conditions for grinding ceramic materials. For this purpose ultraporcelain UF46 and steatite B17 used in industry for radio-ceramics have been selected. As grinding material the products of VNIIASH and of the "Il'ich" Works have been employed. Control was carried out by means of the microscope MS51 and the profilograph IZP-5. The coefficient for the volumetric grinding of ceramics was determined by employing the method of reciprocal grinding of V. D. Kuznetsov (Footnote 1). The hardness of ceramics was determined by means of a sand jet blower (GOST-3751-47). Table shows results obtained by testing ceramic materials. Figures 1 and 2 show profilograms of ground ceramic material

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Grinding of Ceramic Material With Free Grinding Means SCV/72-59-6-4/18

B17 as well as of glass K8, and table 2 the volumetric grinding of ceramic samples. Figure 3 shows the connection between grinding speed and grain size of the grinder. Table 3 gives the values obtained concerning the average maximum depth of pricking out according to GOST 2789-51 (Footnote 2) as well as the classification concerning uniformity of ground ceramics. Tests showed that grinding materials having a grain size Nr 60 and 80 were recommended, and so was the grinding bench SShO-550 of the LITMO type, the scheme of which is shown by figure 4 and the description of which is then given in detail. Table 4 shows the influence of grinding pressure. There are 4 figures, 4 tables, and 2 Soviet references.

Card 2/2

15(2)

AUTHORS:

Kapustina, T. P., Bykova, A. A.

SOV/72-59-7-4/19

TITLE:

The Grinding of Ceramic Materials by Means of Bound Grinding Materials (Shlifovka keramicheskikh materialov svyazannym abrazivom)

PERIODICAL:

Steklo i keramika, 1959, Nr 7, pp 12 - 15 (USSR)

ABSTRACT:

In an article published formerly T. P. Kapustina investigated grinding problems of some ceramic materials by means of unbound grinding material (Footnote 1). In this paper the authors investigate the grinding of flat ceramic products by means of bound grinding materials both on a spur-gear grinding machine of the type 3756MS3 and on a flat grinding machine of the type 371. The products which were processed consisted of ceramic material B17 which was cast or pressed. Grinding wheels of different characteristics and of the dimension 250 x 32 x 75 mm were used. In figure 1 the profile diagram of a ceramic product is represented which was ground by means of the grinding wheel K460 on a spur gear grinding machine. The surface purity was perfect. In consequence of clamping difficulties this method is recommended however only for the grinding of products of great dimensions. The specific

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The Grinding of Ceramic Materials by Means of Bound  
Grinding Materials

SOV/72-59-7-4/19

output  $J = \frac{U_1}{U_2}$  is significant for the grinding process where  $U_1$  represents the volume of the ground ceramic and  $U_2$  the volume of the worked off grinding wheel. Grinding wheels of different abrasives, different ranges of grain sizes, of different hardness and binding were tried. The test results are given in tables 1 - 3. The best results were obtained by the grinding wheel KZ80M<sub>2</sub>K which was used to find the optimum grinding conditions. In table 4 the influence of the grinding wheel feed on the grinding process of the cast and pressed ceramic B17 is demonstrated. In figure 2 the dependence of the feed and the volume of the grinding wheel loss and in figure 3 of the feed and specific grinding wheel output I is represented. In figure 4 the influence of the feed on the grinding power is demonstrated. The experiments carried through confirm the results of Kh. A. Akhundzyanov (LITMO) whereupon the grinding process can be carried through with high feeds and low speeds or with low feeds and high speeds in dependence of the desired surface

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The Grinding of Ceramic Materials by Means of Bound  
Grinding Materials

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purity and manufacturing technology of the products. There are  
4 figures, 4 tables, and 1 Soviet reference.

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ACCESSION NR: AP4043559

S/0146/64/007/004/0009/0015

AUTHOR: Kapustina, T. P.; Porokhova, T. G.; Tarnovskaya, L. V.

TITLE: Structure of the surface layer of silicon and germanium ground plates

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 4, 1964, 9-15

TOPIC TAGS: semiconductor, semiconductor surface, semiconductor crystal, germanium surface, silicon surface

ABSTRACT: The surface layer with a disturbed (by grinding) crystal structure comprises three zones: (1) an outer relief zone consisting of randomly arranged ridges and valleys; (2) the thickest zone with single chips and deep cracks; and (3) a single-crystal zone without mechanical faults but with elastic deformations. Two first zones were experimentally investigated; both probe-type profilometers and interference microprofilometers (design suggested by A. N. Zakhar'yevskiy) were used for studying the first zone; finer studies were made by optical and

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ACCESSION NR: AP4043559

electron microscopes. The depth of each zone was determined by successively polishing off the surface and accurately weighing the specimen. Some results of grinding by carborundum, boron carbide, quartz, artificial corundum, glass, and polyvinyl chloride are reported. The thickness values of the first and second zones obtained by grinding with M14--M5 abrasives are tabulated. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Fine Mechanics and Optics)

SUBMITTED: 07Feb64

ENCL: 00

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NO REF SOV: 005

OTHER: 000

Card 2/2

KAPUSTINA, T.P.; POROKHOVA, T.G.; TARNOVSKAYA, L.V.

Structure of the surface layer of polished silicon plates.  
Izv. vys. ucheb. zav.; prib. 8 no.5:152-157 '65.

(MIRA 18:10)

1. Leningradskiy institut tochnoy mekhaniki i optiki. Rekomendovana kafedroy teorii opticheskikh priborov.

L 08954-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/GG  
ACC NR: AP6009185 SOURCE CODE: UR/0146/65/008/005/0152/0157

AUTHOR: Kapustina, T. P.; Porokhova, T. G.; Tarnovskaya, L. V. 29

ORG: Leningrad Institute of Fine Mechanics and Optics (Leningradskiy institut  
tochnoy mekhaniki i optiki)

TITLE: Structure of surface layer of polished silicon slabs

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 5, 1965, 152-157

TOPIC TAGS: crystalline silicon, silicon single crystal, *metal polishing*

ABSTRACT: The tentative results are reported of a study of the Si-slab surface relief after the surface has been mechanically polished; "polirit," crocus, and oxides of Th, Ce, Cr, Al, Ti were used as polishing materials. The surface microroughness was measured by a multibeam interferometer; a minimum surface irregularity of 100 Å could be detected. The best polishing results were

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UDC: 621.315.592

L 08954-67

ACC NR: AP6009185

obtained with a very fine chromium oxide. The deepest (300--1000 Å) microchecks were formed when the Si surface was polished by a coarse chromium oxide. Polishing wheels made from pitch-colophony, butylmethacrylate, polyvinyl chloride, and caprone netting were tested; the polyvinyl-chloride and pitch-colophony wheels left deeper scratches (up to 430 Å) on the Si surface than other wheel materials. The absence of Si-crystal destruction at depths of 500-1000 Å was proven by etching off the polished surface layer and examining the crystal on a 40000x electron microscope. Orig. art. has: 4 figures and 2 tables.

SUB CODEL 20 ~~00~~ / SUBM DATE: 24Sep64 / ORIG REF: 001 / OTH REF: 007

Card 2/2 nst

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ploskosti. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva  
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[Measuring skill in mental arithmetic in elementary schools] Uchet navykov ustnogo scheta v nachal'noi shkole. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosvetsheniia RSFSR, 1956. 69 p.

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SKATKIN, Lev Nikolayevich; KAPUSTINA, V.S., redaktor; SMIRNOV, G.I., tekhnicheskiiy redaktor.

[Instructions for solving composite arithmetical problems; manual for grade school teachers] Voprosy obucheniia resheniiu sostavnykh arifmeticheskikh zadach; posobie dlia uchitelei nachal'noi shkoly. Moskva, Gos.uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1956. 100 p. (Arithmetic) (MIRA 9:6)

*KAPUSTINA V.S.*

ANDRONOV, Ivan Koz'mich; BRADIS, Vladimir Modestovich; KAPUSTINA, V.S.,  
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[Arithmetic; a textbook for secondary schools] Arifmetika; posobie  
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[Differential equations; study manual for correspondence students  
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pedagogical institutes] Differentsial'nye uravneniia; uchebno-  
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fiziko-matematicheskikh fakul'tetov pedagogicheskikh institutov.  
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TOPOR, Mariya Mitrofanovna [deceased]; SKATKIN, L.N., red.; KAPUSTINA,  
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[Improving the effectiveness of arithmetic lessons in elementary schools] Povyshenie effektivnosti urokov arifmetiki v nachal'noi shkole; sbornik statei. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1960. 105 p. (MIRA 14:6)  
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(Strength of materials)

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[Teaching work with electronic measuring instruments in  
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(MIRA 17:9)

KAPUSTINA, V.V., inzh.

Variation in the cross section of the V-belt due to deformations  
and determining the dimensions of pulley grooves. Trakt. 1 sel'khozmasht  
no.9:31-34 S '58. (MIRA 11:10)  
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KAPUSTINA, V.V., kand.tekhn.nauk

Duty of the engine of a wheeled tractor class 1,4t. Trakt. i sel'khoz mash  
33 no.2:19-20 F '63. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo  
mashinostroyeniya.

(Tractors—Engines)

S/129/60/000/011/005/016  
E073/E535

AUTHORS: Zhetvin, N.P. and Podvoyskiy, L.N., Candidates of  
Technical Sciences, Paisov, A.I. and Kapustina, Ye.P.,  
Engineers

TITLE: Heat Treatment of Low Carbon Electrical Steel 18

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,  
1960, No.11, pp.20-24

TEXT: The author reviews current practice of heat treatment  
of low carbon electrical steel for rimming steel and for killed  
steel. For rimming steel he considers as the most progressive  
method of heat treatment refining annealing in hydrogen. This  
results in a considerable reduction of the coercive force, the  
non-uniformity of the properties and also the tendency to magnetic  
ageing, in addition to preventing or eliminating brittleness. The  
hydrogen also prevents oxidation of the surface. Annealing in  
moist hydrogen has the most intensive effect on decarburization  
and reducing the coercive force (see Table 3). In the case of  
repeated annealing, the use of dry hydrogen is preferable; the  
best properties are obtained by combined annealing in wet and dry  
hydrogen. In the case of killed steel, annealing at 850 to 870°C  
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E073/E535

#### Heat Treatment of Low Carbon Electrical Steel

yields a lower coercive force than annealing at 920°C. However, in the case of double or treble annealing, better results are obtained in the case of annealing at 920°C. In killed steel, aluminium nitrides, which are stable up to approximately 1200°C, impede the growth of the austenite grain and bring about a grain refining during  $\gamma \rightarrow \alpha$  transformation; therefore, annealing at 920°C does not yield any advantage from the point of view of grain size as compared to annealing at 850°C. Long duration annealing in the inter-critical temperature range (850°C) leads to formation of small quantities of austenite, which is carbon enriched, and of a ferrite component which is poor in carbon. This favourable influence of the carbon redistribution over-shadows the effect of decarburization during the first annealing above the upper critical point and further decarburization during the second and third anneal above the critical point over-shadows the effect of redistribution of the carbon. The following conclusions are arrived at:

1) Annealing of low carbon electrical steel should be carried out in a decarburizing medium. The practice of some Works of annealing in iron chips reduces the possibility of obtaining a low coercive

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S/129/60/000/011/005/016  
E073/E535

### Heat Treatment of Low Carbon Electrical Steel

force.

2) For preventing oxidation of components during annealing, the use is recommended of a mixture of one part of soft steel chips and two parts sand, instead of annealing in iron chips.

3) Rimming steel should be annealed above the upper critical point. In this case an increase of the annealing temperature from 900-920°C to 950-980°C brings about a coarsening of the grain, decarburization and lower coercive force values.

4) A single anneal of killed steel at 850-870°C yields a lower coercive force than annealing at 920°C, whilst in the case of repeated annealing, the temperature should preferably be 920°C. ✓

5) After annealing, the steel should be cooled down to 600°C with a speed of 40°C/hour or slower, with subsequent cooling in air.

6) Refining annealing in hydrogen reduces considerably the coercive force, reduces the tendency to magnetic ageing and also permits preventing or even eliminating brittleness which is a characteristic feature of rimming steels. There are 6 figures, 4 tables and 5 Soviet references.

ASSOCIATIONS: Zavod "Serp i Molot" ("Serp i Molot" Works) and  
Card 3/3 MATI

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1. Candidate Medical Sciences. 2. Of the Division for the Study of  
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Labor Institute of Pediatrics (Director — G. N. Speranskiy, Active  
Member AMS USSR), Academy of Medical Sciences USSR.